

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 1 is currently being amended. Claim 12 is being added as a new claim.

This amendment changes and adds claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-4 and 7-12 are now pending in this application with claims 10 and 11 being withdrawn.

**Claim Rejections under 35 U.S.C. § 103**

Claims 1-4 and 7-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,996,105 (“Oyama”) in view of U.S. Patent No. 5,419,969 (“Miyazaki”). In response, without agreeing or acquiescing to the rejection, Applicants have amended independent claim 1. Further, Applicants respectfully traverse the rejection for at least the reasons set forth below.

Applicants rely on MPEP § 2143.03, which requires that all words in a claim must be considered in judging the patentability of that claim against the prior art. Here, the cited references do not identically disclose, teach or suggest all the claim limitations. *See In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Independent claim 1, as amended, is directed to an infra-red reflecting layered structure comprising, in addition to other elements “at least one protective intermediate layer comprising gold, *said protective intermediate layer being located on both sides of at least one of the first and second silver containing layers.*” Without limitation to the claims, Applicants direct the Examiner’s attention to Fig. 3. As shown, gold intermediate layers are deposited on both sides of the silver containing metal layers which significantly improves the stability of the silver containing metal layers. Accordingly, the infra-red reflecting layered

structure claimed in claim 1 has a special protecting layer comprised of gold for protecting the interface between the silver containing layer and the metal oxide layer. In addition, the protective intermediate layer protects the silver containing layer from corrosion and prevents the metal oxide layer and silver layer from intermixing.

Applicants submit that neither Oyama nor Miyazaki discloses at least the aforementioned feature of independent claim 1. In particular, it is submitted that secondary citation to Miyazaki does not remedy the conceded deficiency in the primary citation to Oyama. Accordingly, without conceding the propriety of the asserted combination, the asserted combination of Oyama and Miyazaki is likewise deficient, even in view of the knowledge of one of ordinary skill in the art.

Oyama discloses a multilayer coating comprising alternating layers of metal oxide and silver. In column 5, lines 33-38, Oyama discloses that an interlayer may be inserted at the interface with the substrate or at the interface between adjacent layers or at the interface with air. The function of the interlayer is to improve the adhesion or durability of the coating layers. The interlayer has a thickness to not influence the optical properties of the multilayer. The Office Action concedes that “Oyama does not specifically disclose the composition of the interlayer and the protective function of the interlayer.” Nonetheless, the Office Action rejects independent claim 1, contending that the secondary citation to Miyazaki provides this necessary disclosure. *See* Office Action at pp. 3-4. This contention is respectfully traversed.

Miyazaki describes a multilayer coating comprising alternating layers of oxide films and silver containing films. Miyazaki discloses in column 7, lines 45-49 the presence of an interstitial layer, which is easy to crystallize and in which the inter-atomic distance in the crystal plane parallel to the substrate is approximately equal to that of the Ag lattice. Miyazaki states that because the silver layer is unstable, the function of this interstitial layer is to alleviate the imperfection of the Ag crystal. *See* Col. 3, lines 14-15; Col. 7, lines 45-46. The interstitial layer may be comprised of gold. *See* Col. 7, lines 55-59. However, the multilayer coating in Miyazaki uses an interstitial layer only between the oxide layer and the Ag layer. *See* Fig. 1C. Miyazaki does not disclose an interstitial layer deposited on both sides of the Ag layer. Accordingly, Miyazaki does not disclose a “protective intermediate

layer being located at least between a first silver containing layer and a first metal oxide layer and between a second metal oxide layer and a first silver containing layer” as claimed in claim 1. Thus, Miyazaki does not provide a disclosure that remedies the conceded deficiency in the primary citation to Oyama.

When determining whether a claim is obvious, an examiner must make “a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art.” *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, “obviousness requires a suggestion of all limitations in a claim.” *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Here, the cited references fail to disclose or suggest each and every limitation in as complete detail as is contained in amended independent claim 1.

If this rejection of the claims is maintained, the examiner is respectfully requested to point out where the above-mentioned feature is disclosed in the cited references.

#### **New Claim**

New claim 12 has been added as a new independent claim to further define the claimed invention. No new matter has been added. Support for new claim 12 can be found at least on page 3, line 28 to page 4, line 11.

Further, Applicants submit that the references cited fail to disclose or suggest each and every limitation of new independent claim 12. Specifically, the cited references fail to disclose “wherein said first, second and third metal oxide layer is titanium dioxide deposited by reactive DC magnetron sputtering from a substoichiometric  $\text{TiO}_x$  target where  $x$  is in the range of 1.5 to 2” as claimed. Through the process of DC magnetron sputtering of a substoichiometric  $\text{TiO}_x$  target,  $\text{TiO}$  mainly composed of rutile phase is obtained. In contrast, Oyama discloses that “a titanium target was subjected to radio frequency magnetron sputtering to form a  $\text{TiO}_2$  layer on the substrate as a first layer.” “DC magnetron sputtering” claimed in claim 12, is not “radio frequency magnetron sputtering” as disclosed in Oyama.

Accordingly, Oyama fails to disclose, teach or suggest each and every limitation as claimed in new independent claim 12. Further, Miyazaki fails to cure the deficiencies of

Oyama. Thus, for at least the reasons set forth above, Applicants request that new independent claim 12 be allowed.

**Conclusion**

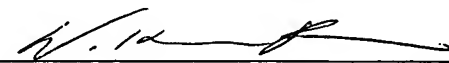
Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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